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INDIAN USE OF WILD RICE

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"Our songs being finished we began our teeth to worke. We had there a kinde of rice, much like oats. It growes in the watter in 3 or 4 foote deepe. There is a God that shews himselfe in every countrey, almighty, full of goodnesse and y preservation of those poore people who knoweth him not. They have a particular way to gather up that graine. Two takes a boat and two sticks, by w^{ch} they gett y^{e} eare downe and gett the corne out of it. Their boat being full, they bring it to a fitt place to dry it; and that is their food for the most part of the winter, and doe dresse it thus: ffor each man a handfull of that they putt in the pott, that swells so much that it can suffice a man."[1] Thus wrote Pierre d'Esprit, Sieur Radisson, in 1668, for the information of Charles II, of England.

Wild rice, *Zizania aquatica*, is common throughout eastern North America, but is most abundant in the shallows of the Great Lakes region. It is also termed Indian, water, and wild oats and marsh rye. Although known to Linnæus,[2] it has never been extensively used, except by some tribes of North American Indians. It grows best from the rich, muddy, slimy bottoms of gently flowing streams or their expansions into marshy lakes. The stagnant water of swamps and the still water of small spring lakes do not seem to furnish its necessities. In scarcely moving water the stalks sometimes come up from a depth of ten feet or more, but this grass is commonly found in water from two to

[1] Radisson's *Fourth Voyage*, in Wis. Hist. Coll., vol. XI, p. 89.

[2] I. A. Lapham. *Grasses of Wisconsin*, in Trans. Wis. Agr. Society, 1853.

four feet deep. It often reaches a height of nine or ten feet and grows in a thick mass; the leaves are long, flat, and lanceolate; the panicle is pyramidal in form; the lower branches are spreading and staminate; the upper branches erect and pistillate. This unusual arrangement necessitates a reversal of the common method of fertilization. In wild rice the small grains of pollen are lighter than the surrounding atmosphere. So, on leaving the anther, instead of falling, as in most plants, they rise to come in contact with the stigmas and produce fertilization.[3] This variety of grass is exceedingly prolific. While found in many of the lakes and streams of northern Wisconsin, it does not grow in all of those which seem fitted for it. It can be sown in proper places with good results. It is an annual, the plant from the seed dropped in the fall coming up through the water in early June and at once putting forth its flower-stalk. It flowers in July and early August and reaches maturity in September. The seed is longer than that of common rice and is of a dark slate color. This plant is the *folles avoines* of the early French writers. Its harvest marked an important time in the Indian's year and preceded the great annual autumnal hunt. With the ancient village sites and the best hunting grounds, the rice fields were esteemed the most valuable tribal property and were vigorously defended.[4]

At the present day wild rice is an important item in the diet of the Ojibwa Indians of Wisconsin. The fields on Kakagon river, several miles from their village, are annually visited for the harvest. In the Ojibwa tongue August is Manominikegisiss, the "rice-making moon." About the first of this month these Indians prepare large quantities of cedar-bark rope or twine, using the inner bark torn into long, narrow strips, which are then tied together. This twine is rolled into a large ball for convenience in handling. Toward the middle of August, when the rice is in the milk, they visit the rice fields in their canoes. Two women usually work together. One paddles or pushes the canoe; the other sits or kneels, with her roll of cedar twine behind her, the end passing forward through a ring on her shoulder. This woman gathers as many rice-stalks as she can conveniently reach and fastens them together in a sheaf by passing her twine

[3] C. L. Flint. *Grasses and Forage Plants*, p. 89.
[4] W. W. Warren. *History of the Ojibways*, p. 222.

around the stalks just below the heads and tying it. This enables her later to gather a large harvest with less trouble, the sheaf being handled more easily and more securely than the loose stalks, and less grain is knocked into the water in the handling. The sheaves stand in rows just far enough apart to allow a canoe to pass between the rows.[5] After allowing them to stand about two weeks, the grain then being ripe, the women return in their canoes and harvest the crop. Formerly the heads were sometimes cut off with a knife and carried to the shore, but this could not be done to advantage when the seeds were ripe.

Some of the Indians, instead of using the twine, would formerly gather a handful of stalks and twist them together and downward, leaving the grain thus to ripen; they proceeded in this manner over a considerable district.[6] When they came later to gather the seed, each woman knew her own by some peculiarity of the twist, and the rights of this ownership were respected. Carver says that each family had its allotment and was able to distinguish it by the manner in which the sheaves were fastened.[7]

Father Marquette probably referred to this practice when he wrote: "They divide the ground whereon this wild rice grows, so that each one can reap his own separately without trespassing on his neighbor's patch."[8]

Sometimes the rice is harvested without the preliminary binding into sheaves. Two women work together sitting in the extremes of a canoe facing each other. The one at the rear is equipped with a long, light pole with which to push the canoe along, this pole being sometimes forked at one end to keep it from sinking too far in the muddy bottom of the stream. The woman at the bow holds two slender cedar sticks a trifle more than three feet in length. These sticks are 1½ inches in diameter at the butt and taper almost to a point. They are specially prepared for this purpose and are used for none other. One of them is sometimes made with a curve or hook at one end. As the canoe is slowly pushed through the thickly grown stalks of rice, this woman bends the stalks over the canoe from one side with her curved stick and strikes the heads smartly with the

[5] Rev. C. Verwyst, O. S. F., in a personal letter.

[6] A. G. Ellis. *Recollections*, in Wis. Hist. Coll., vol. VII, p. 265.

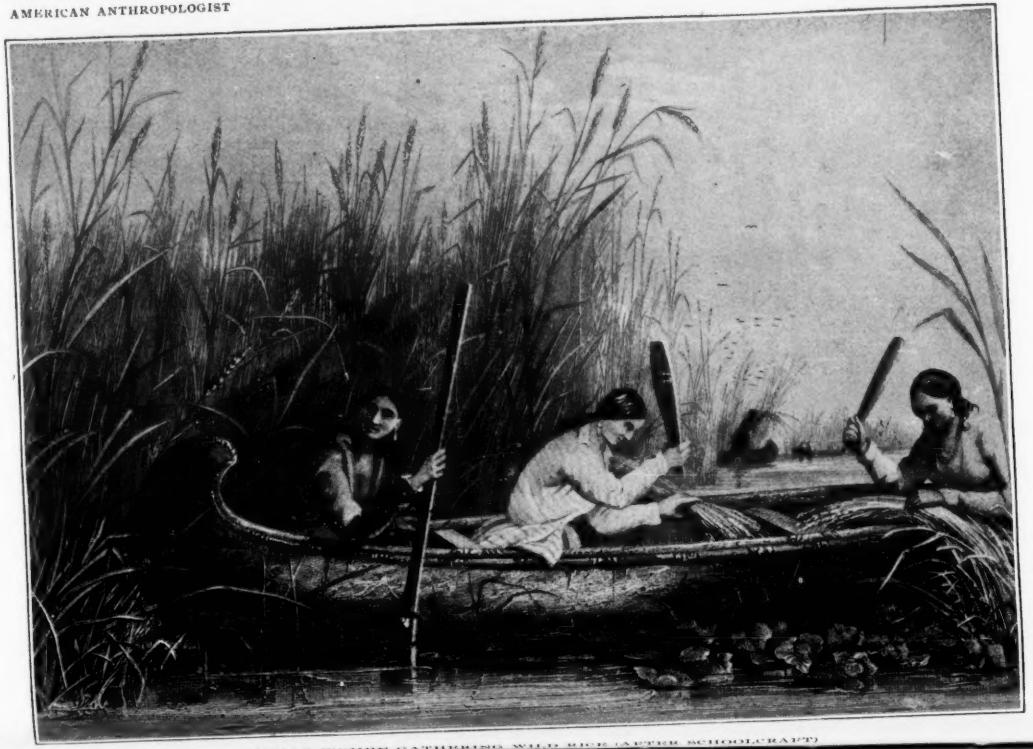
[7] J. Carver. *Travels*, Phila. ed., 1784, p. 210.

[8] *Relations des Jésuites*, 1671. Québec ed., 1858, p. 39.

other stick, dislodging the grain and causing it to fall into the canoe. Reversing hands, she operates in the same way on the other side of the canoe. About a gill is detached at each blow. This operation is continued until the forward end of the canoe is heavily loaded and sinks deep in the water. Then the women exchange implements and duties, but keep their respective seats, and the direction of the canoe's movement is reversed. The work is resumed and is carried on until the other end of the canoe is also loaded, when the women push it to the shore and at once begin their preparations for drying and separating the rice. It is covered at this stage with an unusually tenacious husk, and has a beard about two inches long. When bound in sheaves the rice is gathered in the same manner. Usually, however, after the twine is slipped off the seed drops into the canoe on being shaken over it.[9]

The grain is dried in three ways. Some merely spread it on skins or blankets in the sun until it is thoroughly cured. The quickest process is that of parching a handful at a time in a kettle over the fire, but this method to some extent destroys the nutritive qualities of the grain. The common way is to build a light scaffold, called abwadjigan by the Ojibwas, about three feet from the ground. Upon it is placed a mat of basswood or cedar bark to hold the grain, and underneath a slow fire is built. Sometimes the scaffold is inclosed by a hedge or fence of green cedar branches to confine the heat and thereby quicken the drying process. The rice on the mat is turned or shaken from time to time, and it usually takes a day to dry a scaffoldful.

[9] O. T. Mason, *Origins of Invention*, p. 190, says: "Wherever savages have been visited in their native simplicity, they seem to have found out just how to garner the products of the plants in the best manner: . . . the Ojibwa woman paddles her canoe among the wild rice, and with a proper wand beats the seeds into a coarse mat spread on the bottom." Seed-gathering seems to have been conducted in much the same manner by many Indian tribes. See F. V. Coville, in Am. Anthropologist, vol. v, p. 354, on the *Panamint Indians;* G. B. Grinnell, *Story of the Indian*, p. 65, on the Mandans, Rees, and Pawnees. In *On the Border with Crook*, p. 131, Capt. J. G. Bourke says: "The Apache women place their conical baskets under the tops of the stalks of seed-bearing grasses, draw these down until they incline over the baskets, and then hit them a rap with a small stick, which causes all the seed to fall into the receptacle provided."



INDIAN WOMEN GATHERING WILD RICE (AFTER SCHOOLCRAFT)

For separating the husk from the kernel a hole is dug in suitable ground, about a foot and a half deep and three feet in circumference. After the grain is dry four or five quarts of it are securely wrapped in a moose or deer skin or the modern substitute, a bag, and laid in the hole. The "stalwart brave" then treads on it until the husk is detached. This is considered hard work and its performance has always fallen to the man. At the present day a tub is sometimes substituted for the hole in the ground. After the husk is detached the grain is cleaned in the wind or by means of a birch-bark fan,[10] and is then ready for storage. Properly cured, it can be kept many years if stored in a dry place. It was formerly kept in boxes made of bark.[11] Carver says that the skins of fawns or young buffaloes were taken off nearly whole and sewed into sacks, in which the rice was stored until the next harvest.[12]

In preparing rice for the table the simplest method is that of boiling it in a kettle. It is always cooked unground and usually without seasoning. Cooked into a paste it is used as a substitute for bread. The broth of meat and fish is also thickened with it. It is very nourishing; an acre of wild rice being said to furnish about as much nutriment as an acre of wheat. Rev. Chrysostom Verwyst, O. S. F., of the Odanah Reservation mission, writes: "Wild rice is very palatable, and the writer and his spiritual children prefer it to the rice of commerce, although it does not look quite so nice. I am very fond of it."[13] The Mississagua Indians parched rice until it burst like popcorn, and their hunters and fishermen used it in this form when away from home. They commonly used it in soups or stews.

Father Dablon, in the Relation of 1671, says: "The fat of the buffalo mixed with wild oats makes the most delicate dish of this country."[14] Another mixture was a whole partridge, picked and pounded to jelly, boiled in rice.[15] At a later day a favorite

[10] The Mississagua Indians clean rice by shaking it in a basket. See A. F. Chamberlain in Jour. Am. Folk-Lore, vol. I, p. 150.

[11] *Relations des Jésuites*, 1663, p. 19.

[12] Op. cit., p. 210.

[13] In Wis. Hist. Coll., vol. XIII, p. 429.

[14] Page 44.

[15] J. D. Doty. *Northern Wisconsin in 1820*, in Wis. Hist. Coll., vol. VII, p. 199.

dish was composed of wild rice, corn, and fish boiled together.[16] It is also served with maple syrup and with cranberries. It swells greatly when put into the water. A small handful is enough for the meal of a large family.[17]

In addition to being an important article of food for himself and his family, wild rice served the Indian of former days in another way. It attracted vast numbers of wild fowl of every sort, and thus brought to him another great food-supply. The fondness which these birds evince for wild rice is well known, and to this day in northern Wisconsin they can be found in considerable numbers only on waters where it abounds. The accounts of early travelers fairly teem with descriptions of the vast quantities of birds to be seen hovering around the *Zizania* and the ease with which they might be killed. The birds were in the finest condition after feeding on the rice, "inexpressibly fat and delicious." The rice not only served as a decoy, but also as a blind, the Indian easily concealing himself in its thick masses and sometimes being able to kill the birds with a club.

Although gathered somewhat in the milk, wild rice is harvested mainly in September. The harvest lasts but a few days, as, when fully ripe, the seed is detached at the slightest touch. Even a strong wind for a day or two will sometimes shake all the grain into the water. The binding into sheaves above described to some extent lessens the risk of loss from this cause. It was formerly customary to gather enough to last through the winter, the amount being about five bushels for each family. Some of the more industrious women gathered as much as twenty-five bushels, using the surplus in trade. The Ojibwas of today gather about one hundred pounds for an average family.

Peltries, maple sugar, and rice were the commodities offered for sale by the Ojibwa of seventy years ago. In 1820 a bushel sack of rice was valued at two skins, the price of a large, prime beaver pelt.[18] At the present day this grain may be bought at stores in some of the cities of northern Wisconsin.

[16] J. W. Biddle, in Wis. Hist. Coll., vol. I, p. 63.

[17] An intelligent half-blood of the Odanah reservation writes me in relation to the nutritive qualities of rice: "Fill the stomach real full and then lay down. It keeps from hunger. Not strongly nutritious, it produces great rest and sleep to men, while women work."

[18] J. D. Doty, op. cit.

The value of wild rice to the Wisconsin Indians of early days can scarcely be estimated.[19] They were barely beginning to turn their attention to agriculture.[20] The abundance of this crop, the ease with which it was harvested and transported to their homes, and the facts that it required no labor in preparing the ground and no care while coming to maturity rendered it easily their most important vegetable food. It was one of their staples of subsistence, far more important to them than corn.[21]

There were two centers of Indian population in the district that is now Wisconsin—one along the southern shore of Lake Superior, well toward its western end, and the other in Fox River valley. The first was composed chiefly of Ojibwa, and the latter of Menomini, Potawatomi, Sauk and Fox, Mascoutin, Miami, and Kikapu, in straggling order. Both regions were very good for fishing and fair for the hunting of large game, but undoubtedly the prime cause of the location of the Indian villages was the great crops of wild rice to be obtained in each place with the outlay of little labor.[22] The immense acreage and the dense growth insured a bountiful harvest to every one who was willing to work. In some parts of Fox river this grain grew so densely that passages for boats had to be cut through it, and in one place it spread over an area five miles long by two miles wide.[23] When we read of one small lake which would furnish a supply for 2,000 Indians, and then realize that this region was full of lakes and streams choked with wild rice, it comes forcibly upon us that here in truth was an Indian paradise.

Micronesian Population. — The Micronesian population amounts to from 12,000 to 13,000, and no decrease appears to take place, the northern islands having decidedly more inhab-

[19] See Warren, op. cit., pp. 40, 156, and 175; Parkman, *La Salle*, etc., p. 52, note; Newberry in Pop. Sci. Monthly, vol. xxxii, p. 39.

[20] See Marquette, *Relation*, 1671; also Warren, op. cit., p. 40. For general discussion, see the admirable chapter on Aboriginal America in E. J. Payne's *History of America*, vol. i.

[21] Rev. C. Verwyst in a personal letter. My half-blood friend also writes: "It is presumed to have been the main source of food outside of meat, maple sugar, and fish." See also *Relations*, 1658, p. 21.

[22] S. S. Hebberd. *Wisconsin under French Dominion*, p. 36.

[23] G. W. Featherstonhaugh. *Voyage up the Minnay-Sotor*, p. 184.

itants than in Chamisso's time. A census taken on Nauru in 1891 and 1893 showed the surprising rate of increase of fifteen per thousand per annum. The density is also fairly high, being sixty-eight to the square mile. A physical deterioration of the race seems due to the prevalence of syphilis, by which 50 per cent of the inhabitants are attacked. The population belongs to four sharply defined classes. The great mass consists of the common people (Kayur). The next higher class is that of the Leataketak, comparable to village magistrates in Germany, who see that the orders of the chiefs are carried out. Neither of these classes owns land, but they are allowed to grow as much produce or catch as much fish as is necessary for their sustenance. They have to perform certain services for the chiefs, such as the cutting of copra. The ordinary chiefs, Burak, rank above both of these classes, and they often possess larger holdings than the Iroj, or head chiefs. All the members of these four classes acquire their rank through the mother only. The son of a woman of the Iroj class is always an Iroj, even though the father be a common Kayur. The power and dignity of the chiefs is still considerable, and the judicial observance of the people still gives them the power of life and death.—*Steinbach in Geographical Journal, March, 1896.*

THE BLOODY LAKE.—This is not the title of a somber melodrama or of a feuilleton filled with blood-curdling adventures; it is simply the vernacular in which the pretty Lake Morat in Switzerland is recognized by the peasant fisherman. Upon its picturesque shores Charles le Téméraire, the last Duke of Bourgogne, and his Bourguignons were literally "wiped out" by the Swiss troops in 1476 and thrown into the lake. The old fishermen, when the rays of the setting sun illuminate the bewitched waters and bring out their sinister coloring, say, "It is the blood of the Bourguignons!" This coloration is due—it is a pity to destroy the myth—to the presence in great abundance of a little aquatic plant named by the botanists *Oscillatoria rubescens.* Italler, in 1768, and Candolle, in 1825, wrote interesting monographs on it. The singular fact is that the waters of Lake Morat are the only ones which develop this curious plant. The waters of the other Swiss lakes, like the waters of the sea, vary in color, due to the presence of organic substances, animal or vegetable.

RACIAL ANATOMICAL PECULIARITIES*

D. K. SHUTE, M. D.

The structural peculiarities of different peoples have interested me greatly since an early period in my anatomical studies when, as prosector to the Chair of Anatomy in the Columbian Medical School, I found in the human subject the rare muscle known as the levator claviculæ, and listened with pleasure to the enthusiastic explanation of its significance given by Dr Elliott Coues, the distinguished ornithologist, then professor of anatomy at that school.

During the whole course of his teaching Dr Coues always insisted upon the importance of studying variations, and his influence still continues in the school, for demonstrators and students are always requested to report at once any deviations from the "normal" structure that they may find in the course of their dissections.

Here in Washington there is an excellent opportunity to study structural peculiarities in a race, the negro differing in many interesting respects from the Caucasian.

All students of ethnology recognize readily such obtrusive structural peculiarities as the color of the skin, the character of the hair, and the physiognomy; they also know, in connection with the latter factor, how craniology has been invoked to discriminate between races.

But cranial as well as other measurements of the body show considerable variations in the relative proportions of parts within the same race, a fact which has led many to think that ethnologists have made too much of such measurements—have often given them undeserved prominence and applied them too frequently to the exclusion of other elements.

Cranial capacity, for instance, is not indicative of race in individuals; it is only of value as an induction based on an examination of large numbers of skulls; and even here it is only important when taken in connection with other features. To say that a skull belongs to a high race instead of a low one, for

*A discussion held before the Anthropological Society of Washington, January 7, 1896

instance, because it is megacephalic is entirely misleading; but to say that a high race will contain a larger percentage of megacephalic skulls than a low one is not only true, but helpful to the ethnologist. Indices, too, deal with the more conspicuous of racial structural peculiarities, while I wish to speak briefly of some of the less noticeable features.

As bearing in an interesting and instructive manner upon the question of racial anatomical peculiarities, a study of the present evolution of man is important.

Man apparently is undergoing at present a comparatively rapid development, almost as rapid, it has been observed, as was that of the horse from eocene times.

In this evolution of the races or subspecies of man, sexual selection has been a potent factor in producing the more glaring anatomical peculiarities, such as the color of the skin, the amount and character of the hair and its distribution over the body; but also use and disuse account for many of the less obtrusive ones.

This latter statement brings us, no doubt, to questions at issue between Weismann and Spencer as to the transmission of acquired characters.

Some of the regions in which evolution may be said to be now going on are as follows: the skull, in which the face is decreasing in size, with early closure of sutures, while the cranium is increasing in size, with late closure of sutures.

The canine teeth have comparatively recently been reduced in size and the third molar teeth are tending to disappear.

The assumption of the upright posture has led and is still leading to an interesting series of correlated changes in the thorax, pelvis, and lumbar vertebræ.

This posture has shifted the weight of the abdominal viscera from the thorax to the pelvis, and we find in consonance with this fact the eighth, ninth, and tenth ribs are reduced in size, the twelfth rib tends to disappear, and also the last lumbar vertebra tends to fuse with the sacrum, thus tilting up still farther the pelvis.

In reference to this subject, Professor Osborn has suggested that it would be interesting to note the condition of the ribs in some of the large-bellied tribes of the Africans. Rosenberg predicts that the man of the remote future will probably have but twenty-three free vertebræ.

The curvatures of the spinal column are tending to increase.

The female pelvis, in correlation with the augmenting cranium, is increasing in size, and thus diverging more and more from the male type.

The bones of the big toe, through use, are tending to increase in size, while those of the little toe, through disuse, are tending to decrease, with reduction of the number of phalanges by ankylosis.

In the study of these and other portions of the body that may be considered as still undergoing an evolution, it is important to note in the different races the degrees of divergence presented from the ordinary normal type and the percentage of relapse into more primitive conditions.

As the muscular system offers a degree of plasticity not found in the harder tissues, I am strongly inclined to think that the study of its variations must be fraught with instruction and interest.

But in the study of these variations a sharp distinction must be made between those that are atavistic (levator claviculæ, dorso-epitrochlearis, etc.) and those that are prophetic (*e. g.*, occasional appearance of double abductor pollicis; the occasional absence of palmaris longus); also, in the study of all variations, whether muscular or otherwise, due care must be exercised in eliminating fortuitous cases—that is to say, sports or monstrosities—such as supernumerary digits and incisors.

In this study of atavistic structures percentages of relapse may throw important light on racial structural peculiarities.

Muscular racial variations are most instructively investigated in those organs that are distinctively human, as the hand and foot.

As man descended from arboreal, "quadrumanous" animals, his assumption of the upright posture led to specialization in two different directions—the thoracic extremity for prehension and the pelvic one for locomotion.

On the one hand man's thoracic extremity (especially his hand), being used for vastly more diverse and complicated purposes than that of his simian ancestors, has undergone greater specialization; for instance, the extensor secundi internodii pollicis is completely separated from the extensor indicis; the flexor longus pollicis is detached from the flexor profundus digitorum; also the extensor minimi digiti has withdrawn its ad-

ditional tendons from the third and fourth digits and is now restricted to the little finger. The extensor primi internodii pollicis is separated from the extensor ossis metacarpi pollicis, etc. On the other hand, the muscles of man's foot, which in his simian ancestors were concerned in making his foot prehensile as well as locomotor, are, through disuse, undergoing atrophy and disappearance (*e. g.*, adductor and abductor hallucis; the flaxor brevis minimi digiti) where they are not generalizing by fusing (*e. g.*, the flexor longus hallucis with the flexor longus digitorum).

The opponens hallucis is a muscle that is found normally only in the orang. It occasionally occurs in man as a reversion.

Therefore, in view of these facts, the following question is an interesting one: Do the different races in respect to these structures present different percentages of reversion to the simian characteristics?

It is interesting to note in this connection that percentages of reversion in *osseous* structures differ in different races and epochs. For instance, it has been observed that the intercondylar foramen is present in a little over 3 per cent of the skeletons of the present time; in a little over 5 per cent of those that belong to the time from the fourth to the tenth centuries; in 24 per cent of those belonging to the Dolmen period; and, finally, in 30 per cent of those of the Reindeer period.

Again, the third trochanter of the femur has been found in 1 per cent of our race; in 37 per cent among the Swedes; in 50 per cent of the Sioux, and in 64 per cent among the Laplanders.

In the light of these facts it would appear to me that a wider study of muscular variations in different peoples will present an interesting and instructive field for the investigation of racial anatomical peculiarities.

In conclusion, it may not be amiss to briefly mention some of the anatomical peculiarities which, taken together, stamp a race as high or low, viz, cranial sutures that are simple in arrangement and unite early; a wide nasal aperture, with the nasal bones ankylosed; undue projection of the jaws and receding chin; well developed wisdom teeth appearing early and permanent; a humerus of undue length and perforated; an elongated calcaneum; a small calf of the leg; a flattened tibia; a narrow pelvis, etc.

These characters are simioid, and the races possessing them in largest number and development are the lowest in the scale.

Measured by these criteria the Caucasian stands at the head of the racial scale and the Negro at its bottom.

Dr FRANK BAKER remarked that the reason why anthropometry has contributed no more to the establishment of racial distinctions seems to arise from the fact that its methods have been too scholastic and do not reach the true morphological characters. The mere measurement of the length and width of an organ gives but little idea of its characteristic forms. In other biological sciences the general facies of a species is used for classification rather than meager data depending on measurements alone. It seems, however, pretty clear that whatever may be the racial distinctions of man they are not such as would entitle us to establish distinct species of mankind. The differences are varietal rather than specific. The conditions under which man has developed would necessarily produce this result. The character which first differentiated him from other animals was an increased intelligence, by which he was enabled to secure a wide range for his food and activities. Consequently he became from the first a continental animal, spreading over vast areas and adapting himself by his intelligence to a vast variety of conditions. Under these circumstances there was no opportunity for him to get set in any small environment which would produce specific characters markedly differentiating him from his fellows.

The use of the term atavism has been considerably abused by biologists. It would seem that it has not always been considered what vast periods of time intervene between the formation of widely different stocks in the animal kingdom. When Sutton suggests that the round ligament of the hip joint is a survival of an insertion of a muscle found only in the *lizards*, and Waldeyer considers that certain fibers of the ciliary muscle are vestiges of the Cramptonian muscle of *birds*, it seems to me that those eminent authorities forget the extreme improbability of genetic continuation of structures between such widely different stocks and through such innumerable generations, they having, nevertheless, totally disappeared in intervening forms. Such speculations can only be considered sound when a fairly continuous series of forms is found along the probable line of descent.

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For that reason we should be very careful not to attribute to atavism every aberrant form of muscle which may be found, even if it resembles more or less remotely some forms that are stable in lower animals. An exact scientific morphology of the muscular system is yet wanting, and it will be impossible to give proper value to muscular variations until we have more knowledge of the laws which regulate the general formation and distribution of muscles.

Dr Shute has alluded to the racial peculiarities of the negro. These have probably been misunderstood. The ape-like character of the negro is often commented upon in popular prints and in the speech of those not versed in anatomical studies, but as a matter of fact there does not seem to be adequate ground for the conclusion that his racial peculiarities are remarkably simian. In the remote past, when the human stock budded off from the primitive, possibly lemuriform, common stem from which both men and apes have come, it would appear that the African race went on living in tropical climates, suffering, perhaps, some retardation from the peculiarities of its environment, but on the whole becoming markedly modified from its primitive form. The Caucasian race lived mainly in temperate climates and developed in another direction. Neither are remarkably simian, for it must be remembered that the apes, too, have been modified in their own way. Each has proceeded in development according to the condition of its existence.

After examination of many bodies of Africans found in the dissecting rooms, it seems evident that ape-like characters are no more common among them than among whites. There is sometimes a slighter degree of differentiation found in the muscles of the hand. It is, for example, not infrequent to find the long flexor of the thumb blended with the deep flexor of the fingers. The peculiarities of the lumbar curve in the negro, mentioned by Cunningham, and the longer heel are both adaptations to the semi-erect posture necessary when running through the bush in hunting or in predatory excursions. Together with the long heel we find small calf muscles, Marey having shown that in all running animals there is a correlation between the size of these muscles and the length of the calcaneal lever. When the heel is long, the leverage is such that small muscles are sufficient for the activities of the animal, and vice versa.

With regard to the intercondyloid foramen, some doubts may well be raised as to its value as a racial characteristic. In a large percentage of modern Caucasian skeletons the bone is here quite thin. How natural it is that after long exposure to the elements the slight wear that occurs at the surface should cause an originally completely closed humerus to show a perforation here. Besides, as has been ably shown by Dr Washington Matthews, it appears highly probable that food habits have a great effect upon this as upon other osseous characters. Those races that have plenty of meat and are well nourished will show *ceteris paribus* the most firm and resistant bones. If they feed mainly upon grains and have periods of scarcity, the bones will show a corresponding tendency to deteriorate. It is highly probable, therefore, that in dealing with the intercondyloid foramen in ancient peoples we are likely to be misled both by the wear of the bones and by accidental variations.

The statement made as to the occurrence of the third trochanter of the femur seems exaggerated. An inspection of the skeletons of the Sioux in the Army Medical Museum will convince Dr Shute that he has overestimated its frequency in that tribe.

The subject of racial peculiarities is a vast one and requires an extensive knowledge of comparative anatomy for its proper discussion. It is to be hoped that in a future paper Dr Shute will give some definite statements of the results which he has obtained from actual inspection of anomalies in the African and Caucasian.

Dr Theodore Gill expressed his gratification at the able treatment of the subject under consideration by Dr Shute and Dr Baker, but did not entirely agree with all their conclusions, and ventured to express his own ideas. Whether the differences between any of the varieties of man are of specific value was a moot question; but almost all investigators would agree with the previous speakers that they were not. If we only had typical forms to determine, such as a Congo negro, a Tartar Mongol, or a high-caste European, the differences would be equal to those between some very closely related species of other mammals; but the gaps between such typical forms are bridged by intermediate stages to such an extent that it becomes impossible to accord more than subspecific rank to any variations. (Species,

be it remarked, in the language of the zoologist, are forms between which no true gradation occurs, while subspecies are those which are almost always geographically limited, and would be called species if gradation was not known to occur.)

The speaker was inclined to consider the existing condition as the final result of what has been called "eugenesis" and the earlier result of confinement of the ancestral stock within a comparatively restricted (not continental) area, until the evolution of man from the simioid stock had been completed. That evolution was doubtless rapid, geologically speaking, and the ancestral stock not far to seek.

The speaker presumed that when Dr Baker referred to the primitive, arboreal, lemuriform ancestors of man he did so simply in a spirit of euphemism and with a desire to save the feelings of the extremely sensitive; but he (the speaker) felt at liberty at least to acknowledge his own ancestors, and he claimed descent from forms so much like the chimpanzee and the gorilla of the present day that the ordinary man would have recognized at once the resemblance if he could have observed them.

The very numerous characteristics which man shares with the higher simioid apes—and even with the chimpanzee and gorilla as compared with the orang-outan—warrant the assumption that their not very remote ancestors were probably the same as ours, and that while we have so widely diverged from the common primitive stock they have diverged but little.

Dr Shute struck the keynote when he affirmed that use and disuse account for many of the differences. This the speaker had long maintained and would now illustrate by a few examples.

Disuse is at the bottom of a series of changes which has affected the face of man. Our simian ancestors, like all the other simioids, had strong canines and used them for offensive and defensive purposes. At last some almost ceased to use them as such, resorting rather to clubs and hands. With disuse or decreased use the teeth became reduced in size; with such reduction the diastemata for their reception became obliterated, and then the continuous rows characteristic of man supervened. Consequent on the smaller teeth the jaws became less prognathous. Next the masseter and temporal muscles which moved the lower jaw lost their vigor. There being then no demand for the lambdoidal and sagittal crests, those at last disappeared.

Use affected the organ of mind. The brain, answering to stimuli, gradually increased in size, and necessarily the bones around it became enlarged.

Use and disuse thus brought about a skull like man's—in fact, man's new skull. Equally may use and disuse, or, at least, diminished and modified use, be credited in large part with the enlarged hind limbs and the abbreviated fore limbs of man and the specialized feet and hands.

The speaker agreed with Drs Baker and Shute that the negro was not exactly intermediate between the white man and the apes, but it must be conceded that he resembles the latter more in color, the prognathous jaws, and the depressed nose, and those characteristics are doubtless the result of inheritance and retention from our common ancestral stock. To the extent of manifestation of such characteristics (and others coincident with them), the negro is an example of retarded or arrested development.

Averages and percentages expressing comparative (and not absolute) differences are most useful, but they must be used with great caution, and we should be on the constant watch lest fallacies creep in. When, for instance, we are told that the third trochanter of the femur is found in 37 per cent of the Swedes and in only one per cent of "our own race" (presumably the so-called Anglo-Saxon stock), we may be sure that there is an undue selection of figures (although unintentional) in one case at least.

The speaker was very glad to hear the protest against attributes to atavism, and entirely concurred with Dr Baker that the term had been much abused by some naturalists. There is room for new variation in the future as in the past, and unless a given structural characteristic existed in an ancestral stock of at least the same *class*, it is much more probable that the appearance of any feature analogous to one in a lower class is due to fortuitous—that is, unknown—conditions rather than the result of atavistic energy.

Mr G. R. Stetson said: "Skill in the use of tools and in directing machinery is the gift of culture. I know of no better illustration of this fact than the present industrial status of the Southern negro. In reference to his adaptation to the higher mechanical employments dependent upon mental and physical dexterity, I

some time since made inquiries of several leading cotton manufacturing companies in the South which developed the following facts:

"*First.* That his deficiency in technic skill and muscular training effectually handicaps the negro in competition with the white as a factory operative.

"*Second.* That in addition to his deficiency in technic skill he is hampered by his moral and racial peculiarities and proclivities.

"*Third.* That with proper training, which time only can supply, he will become available.

"*Fourth.* That at the present time, if employed at all in the cotton mills, the number is extremely small, and then only in menial occupations.

"It is evident that only when, because of a large increase in the number of mills, white labor becomes scarce will an effort be made to train those who have the largest admixture of white blood for employments requiring inherited technic skill."

Cavate Lodges in North Dakota.—Mr Alfred T. Marks has recently discovered a series of eleven communicating cavate rooms in the limestone cliffs of Missouri river, 65 miles north of Bismarck, N. D. The first lodge entered contained a number of bones—probably of the coyote—and near the extreme end of the chamber, about 12 feet from the entrance, in a sitting posture, with backs resting against the side of the cave, two well-preserved Indian skeletons. On the floor in front of each lay a flat, slightly hollowed stone, containing what appeared to be parched corn, together with several small pieces of bone. Near these implements were a number of rudely made arrowpoints of chalcedony and other stone, a tool of buffalo horn—probably an arrow-chipper—and several shells foreign to the vicinity. The adjoining caves, while smaller than the first, also contained a number of skeletons, all in precisely the same position, and in most cases with similar surroundings. In every instance the face of the skeleton was toward the east.

Pictographs.—Interesting pictographs have recently been discovered by Canadian Senator McLaren, of Perth, on the shores of Lake Massanog, in South Renfrew county, Ontario.

PUEBLO SNAKE CEREMONIALS

F. W. HODGE

It has generally been supposed that Pueblo Indian snake ceremonials have been performed only among the Hopi or Moki tribe of northeastern Arizona and at Sia in Jemez valley, New Mexico, although attention has been directed to a reference by Antonio de Espejo to a dance "con vivoras vivas" witnessed by that sturdy Spaniard at Acoma in 1583. It may therefore prove of interest to note that evidence of at least the former observance of snake ceremonials at other villages was obtained by the writer during a reconnoissance of the New Mexican pueblos in the summer and autumn of 1895, especially as such indications may shed light on the origin of similar observances practiced at the present time.

At Laguna—whose people have probably been more greatly affected by civilization than those of any other pueblo—it was learned that in the summer village of Hatsáyĭ, commonly known by the Spanish name Mesita, the natives kept a large rattlesnake, which they brought out in certain ceremonials. This occurred over twenty years ago. Today no such rite is performed, although the old men even now seem to have a lingering regard for the rattlesnake, since, like the Hopi, they religiously refrain from killing one.

With reference to this rather recent Laguna ceremony, which appears to have been somewhat akin to the celebrated snake-dance of the Hopi, it is noteworthy that the native designation of the pueblo of Laguna is Kawaík', a term practically identical with Kawaíka, the name applied by the Hopi to a pueblo in their country which they assert was abandoned by its inhabitants after the Spaniards came.

It is well known that Laguna is the most recent of all the pueblos, it having been established some time prior to the year 1700. According to Laguna tradition, a Sia and a Zuñi Indian met on the present site of Laguna, just west of which was a lagoon (whence the village name) whose banks were fringed with trees and shrubbery. Believing it to be a desirable site for a settlement, these two Indians agreed to go to their respective homes

and return with their families. This little gathering was soon followed by other natives of Zuñi and Sia, and these in turn by quite a large body from Acoma, whose inhabitants had always regarded the site of Laguna as a part of their hunting grounds. The people of the present Laguna are the descendants of emigrants from the Keres villages of Acoma, Sia, and San Felipe, the pueblo of Zuñi, the Tanoan pueblos of Jemez and Sandia (these two speaking remote dialects), and one of the Hopi villages, "probably Oraibe."

Now, these Hopi emigrants to Laguna formed the Rattlesnake clan of the latter pueblo and became affiliated with the Water-snake clan (Skŭr'shka-háno) from Sia, the Earth or Sand clan (Hátsi-háno) from Jemez, and the Lizard clan (Méyo-háno) of unknown origin in the form of a phratral organization, all of these clans being still represented at Laguna (except the Earth or Sand folk, who are extinct) and among the Hopi. Indeed, among both of these people the Earth or Sand and the Lizard clans belong to one phratry. It therefore seems quite likely that the snake ceremony performed at Laguna only twenty years ago had its origin among the Hopi, and that it came not "probably from Oraibe," as the Laguna people say, but more likely from the now ruined pueblo of Kawaíka, whose name adhered to the newly founded pueblo near the lagoon.

It should here be said that the name of the former Laguna summer village of Moquino, nine miles north of Laguna, but now a Mexican settlement, has no reference to "Moqui," but to the well known Moquino family of New Mexico who owned the land on which the town was afterward located.

It might be asked that if people from Sia, who also have a snake-dance, as described by Mrs M. C. Stevenson, migrated to Laguna, why should not the rattlesnake ceremonial of the latter pueblo have been derived from Sia? or if, as Espejo asserted, the Acoma had a snake-dance, why not from that pueblo? In the first place, the snake-dance of the Sia is a very modern rite with that people, it having been introduced by the Cochití somewhat more than thirty years ago. I was informed by an unusually intelligent Cochití Indian that the Sia had no snake ceremony before the sacred reptile from Cochití was introduced there. The reason for the transfer of the ceremony from one Keres village to another may be explained only by surmising that the snake rite

at Cochití came to an end with the death of the last member of the Shrúhwi-hánuch or Snake clan of that pueblo. The Snake clan (Squ-háno) of the Sia is among the existing clans of their village, and members of the Shqúwï-hánoq[eh] are still found at Acoma, but are not affiliated with any other clan in the form of a phratry, as at Laguna and among the Hopi. Judging from the fact that, so far as is known, the entire Hopi people of Kawaíka abandoned the region of northeastern Arizona, and that they proved to have wielded sufficient influence to impress the name of their old village on the new Laguna, and by reason also of the fact that the Snake clan of the Hopi is of such importance and the snake ceremonials of that people so highly developed, it is more reasonable to presume that the former Laguna snake rites were introduced from the Hopi rather than from Acoma, where its influence was so slight as to leave not even a traditional trace.

At San Ildefonso a Snake society is reputed to exist, but it could not be learned whether rattlesnakes are used in the ceremonials. Indeed there is reason for doubting the existence of a Snake society and its dependent ceremonies in this or in any other pueblo in which a Snake clan has not been or is not represented. This is another reason why the Laguna snake rite may not have been derived from Acoma, since the Laguna clans (Koháia, Bear; Tyá-mi, Eagle; Tsŭshki,* Coyote (partly), Kóchinish-yáka, Yellow-corn; Kŭkinish-yáka, Red-corn; Sits, Water†) which migrated from that town did not include a Snake people, or indeed any clan related to the Snakes, while this was quite the reverse in the case of the Hopi emigrants.

The assertion that Snake ceremonies will in all probability be found only at pueblos in which Snake clans are traceable seems to be sufficiently supported. When the ceremony of the rattlesnake was brought to a close at Cochití it was not transferred to Santo Domingo, San Felipe, or Santa Ana—the nearest Keres neighbors—but to Sia, for no other apparent reason than that no Snake clan exists or existed at any of these other towns. The pueblos in which Snake clans are found are the Keres villages of (1) Laguna, (2) Acoma, (3) Sia, and (4) Cochití (extinct), at

* Compare Súski, the name of the Coyote clan of Zuñi, whence came the other part of the Coyote folk of Laguna.

† All of these clans except the Coyote are still represented at Acoma.

(5) Zuñi, and (6) various pueblos of the Hopi. In each of the Keres villages Snake ceremonies have been performed, as above noted. So far as is known, no such performance is conducted at Zuñi; but among the Hopi, particularly at Walpi, the snake-dance is renowned.

At Laguna the Snake-folk is known by the name Sqówi-háno; at Acoma, Shqúwï-hánoq^{ch}; at Sia, Squ-háno; at Cochití, Shrúhwi-hánuch; at Zuñi, Chítola-kwe, and among the Hopi, Chúa-wuñwü.

Hausa Language of Africa.—In west Africa there is a written language—Hausa, with the Arabic alphabet—and the rudiments of a literature. This is taught in the Mohammedan schools, and letters pass from district to district, written by the merchants or the scribes of the kings and emirs. An association, called the Hausa Association, has been formed to promote the study of this language, which may be said to be the *lingua franca* from the shores of the Mediterranean to the gulf of Guinea. The Hausa student, Mr Robinson, who was sent by the association to study the language on the spot, has recently returned from the great Clapham junction of west Africa, the city of Kano and he has done most admirable work in compiling a dictionary and grammar of the language in spite of very great difficulties, which it took no ordinary amount of courage, resolution, and perseverance to overcome. I hope that before long he will give a public account of his work and its results. I have here a small pamphlet—part of the Gospel of St Matthew—transcribed into Hausa.—*F. D. Lugard in Scottish Geographical Magazine, December, 1895.*

Cliff Dweller Remains.—The mummified remains of an Indian were recently discovered by Mr John McCarty, of Prescott, Arizona, in a walled-up cist in one of the cliff dwellings on Verde river, a dozen miles north of the mouth of the East Verde. The mummy was found in a sitting posture. Several broken earthenware vessels, a stone axe, and a dozen obsidian and flint arrowpoints accompanied the remains.

BOOK REVIEWS

Archeological Studies among the Ancient Cities of Mexico. By William H. Holmes, Curator, Department of Anthropology. Part I, Monuments of Yucatan. (Field Columbian Museum, publication 8, Anthropological series, Vol. i, No. 1. Chicago, 1895.) 8°, 137 pp., 18 pls., with 14 descriptive pages.

A new intellectual center has formed. For something over a generation the energy of Chicago was spent in accumulating wealth, the foundation for leisure and culture; two decades past the budding culture manifested itself in appreciation of the drama and then of music, the first and second mile-stones in intellectual progress among peoples; awakening to the beauties of painting and sculpture quickly followed in normal sequence, and the reading and accumulation of standard literature came after, so that a dozen years ago those who note psychic signs perceived that an intellectual sun was rising on the city by the saltless sea. At that time it would have been rash to predict a date for the dawn of a scientific culture, though the culture itself was presaged as the end of the series of stages passing up through the drama, music, painting, sculpture, literature; but soon after a great library came, then a noble university, and next, under the stimulus of an international exposition, a grand museum, and these institutions interact with spreading intelligence and make strongly for still better things. The scientific culture of Chicago is young but vigorous; already several important periodicals are issued, chiefly under the patronage of the university, and several noteworthy publications have emanated from the museum; and no better illustration of the excellence of the scientific work in this new center has appeared than is found in the recent monograph on the Monuments of Yucatan. The rapidly growing intellectual activity of Chicago must be a source of gratification to all thoughtful people, and the recent activity in research is a matter for congratulation in all scientific circles.

When the Spaniards came to the new world few things impressed them more profoundly than the extent and splendor of the structures found in certain provinces; and the early descriptions of America were enriched with accounts, sometimes distorted and overdrawn but always attractive, of the temples and

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roads of the Incas, the ancient cities of Yucatan, and the halls of the Montezumas. None of these accounts excited greater or more persistent interest than those of the ruins of Yucatan, and a long line of archeologists and explorers followed in the footsteps of the Spanish pioneers and have gradually corrected the early distortion and eliminated the early extravagance, and diffused definite knowledge concerning the ancient cities of Palenque and Chichen-Itza, Uxmal and Izamal, Tikul and Tuloom. The latest in this line of archeologists was Professor Holmes, who, under the auspices of the Field Columbian Museum and through the courtesy of Mr A. V. Armour, a patron of the Museum, examined several of the cities early in 1895. Many of the results of this examination are set forth in the elaborately illustrated monograph forming the first of the anthropological series of the Museum publications. The detailed descriptions are of special value by reason of the author's familiarity with aboriginal art and architecture and his training in perception and delineation, and the conclusions of special weight by reason of his experience in cognate researches and his clear recognition of genetic development among things artificial as among things natural.

Beginning with a summary of the expedition, Professor Holmes points out that a thousand years ago or more Yucatan was peopled by a peaceful and priest-led race, who built temples and palaces, rich in unique though barbarous sculptures, about the great cenotes or natural wells, but that the strength and unity of the people waned, so that many of their cities were ruined before the Spaniards appeared. Amid the ruins the conquerors found the Maya Indians, some 2,000,000 strong; they were of advanced culture, leading the North American tribes in language as in architecture, and having a fairly well developed system of hieroglyphics—indeed "an age of literature was actually though slowly dawning . . . when the shock of conquest came" (page 20); they possessed an elaborate calendar system of surprising accuracy, one of the notable products of their priestcraft; they were agricultural, and had mastered the textile and ceramic arts; and they engaged in commerce, navigating the seas as far at least as Cuba. Their most striking accomplishments were in the direction of architecture, and the author's summary of the architectural features of the ancient cities

carries the weight of generalization by a skilled observer. The ancient structures remain in surprising number and are often of colossal size, and the buildings are the more conspicuous because commonly erected on pyramids or terraced platforms. Most of those remaining were probably temples, some perhaps gymnasiums or ball-courts; they were not defensive, and seldom if ever mortuary. The relation of parts indicates a real architecture in accordance with predetermined plan, and argues the use of instruments of precision, though the structures of Yucatan are not so well oriented or grouped as those of other portions of Mexico. The material of the structures is chiefly the massive Tertiary limestone of which the peninsula is composed, with mortar and grout, and backings or heartings of earth; the stones used in facing are large, but not enormous as those used by the Incas and Montezumas, no single block weighing more than six or eight tons; and blocks and beams of wood were sometimes used in combination with stone. The structure is extravagantly massive, the cubic content of walls and partitions often exceeding the aggregate content of the rooms; and, in a typical case, if the substructure is taken into account, the mass of masonry is to the chamber space approximately as 40 to 1. The distinctive features of the Yucatec buildings are (1) massive hearting of earth, grout, or rubble, and (2) facing or veneering, usually with elaborately carved blocks, albeit of crude design. each block forming part of a figure or group, while in each wall the blocks are united in a mosaic of form. "Words fail to give a clear notion of the work, for what definite conception is conveyed when it is stated that in a single continuous façade upward of twenty thousand stones were used, not only hewn of varied special shapes, but each sculptured to represent some individual part of a face, figure, or geometric design, and all fitted together with such skill as to give the effect of an unbroken whole?" (page 26). Stucco work and painting were combined with carving in the representation of subjects, chiefly sacerdotal, in glyphs and reliefs, with some statuary.

The details of structure and ornamentation are illustrated in excellent photographs, admirably reproduced, as well as by the facile pencil of the artist-author. A feature of the work is the representation of cities in plan and juxtaposed birdseye panorama, from which the vegetation is omitted, so that relations may

be seen more clearly than on the ground save after continuous study; and those who know the skill of America's foremost delineator of geologic and archeologic landscape will appreciate, but not overestimate, his modest dismissal of them as "the merest sketches." Although the work professes to be no more than an outline, it is done strong and clear.

W J McGee.

Wand-Malereien von Mitla. Eine Mexikanische Bilderschrift in Fresko. Nach eigenen an Ort und Stelle aufgenommenen Zeichnungen herausgegebenen und erläutert. Von Dr E. Seler. A. Asher und Co. Berlin, 1895, 58 pp., 13 pls., fol.

The wonderful ruins of Mitla, in Central America, have been well described, with fair illustrations, by Charnay, Bandelier, and others, so that their general appearance is well known to archeologists. A detailed study, accompanied by careful excavations of the pyramids and "palaces," remains yet to be made. The mural paintings which once decorated the rooms have been lately figured by Professor Starr, of Chicago University, and are now reproduced in color in the beautifully printed memoir above mentioned.

One of the interesting novelties of Dr Seler's contribution is his attempt to identify the figures represented in these paintings, and to do this he brings to the interpretation a broad knowledge of Mexican pictography, based on field explorations and documentary studies.

The largest number of these mutilated frescoes represent a mythical personage, Quetzalcoatl, whose legendary history played such a prominent part in the mythologies of Mexico and Central America.

As pointed out by Dr Seler, these pictures resemble those of the Codex Borgia, from which likenesses he is led to an important conclusion that this beautiful codex must have originated not far from the place where the artist of the Mitla work derived his mythological inspiration. It is possible that both show the influence of a Nahua-speaking stock, but not necessarily those Nahuas a modified branch of whom in the valley of Mexico obtained such great political power and are ordinarily called Aztecs. This latter energetic branch developed the cult of Hutzilopochli to such an extent that it overtowered that of Quetzalcoatl, but

among other branches the latter was of far greater importance. The great sanctuary of Quetzalcoatl was at Cholula, and neighbors of Mixtecs, Zapotecs, and Mayas disseminated this component far and wide. It is not improbable that from this substratum of mythology, which extends as far as the traces of the Nahuatl tongue have been detected, may have sprung the widespread Plumed Serpent cult of Arizona, Mexico, and Central America. The much-abused name Toltec, not as a designation of a distinct people, but rather as a cultus stage, may conveniently be used to designate this influence.

The figures of Quetzalcoatl in the mural paintings of Mitla resemble in general characters those of the god "B" of Mayan codices, which, so far as it goes, is instructive as regards the identification of "B" as originally "The Plumed-serpent god." The Mayan and Zapotec variants appear to be traceable to the same primitive conceptions. Seler likewise finds pictures of the Sun god, the God of Death, and other personages among the Mitla wall paintings.

One of the most valuable parts of the memoir is a German translation of Father Burgoa's description of Mitla, a work so rare that the translator searched in vain for a copy of the original in German and Austrian libraries. Although it is sometimes questioned whether Burgoa ever saw Mitla, his description, published in Mexico in 1674, of this sanctuary and its mortuary crypts, in which "kings," priests, and "nobles" were interred, is valuable, and Seler has rendered an important service to science in thus making this old account available. Naturally he finds it difficult to identify the present ruined chambers with those described by Burgoa, but his efforts in that direction are commendable.

The typography and illustrations are excellent, but the size of the memoir makes it awkward for study, and some of the unduly enlarged figures would not have suffered by reduction and a more compact arrangement. A good index accompanies the work. The memoir is appropriately dedicated to Count Loubat, who hasmost generously contributed to the study of Mexican antiquities.

J. Walter Fewkes.

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NOTES AND NEWS

"FREE BURGHS" IN THE UNITED STATES.—In the early settlement of the United States corporations were established or contemplated free of county government—"free burghs," as termed in the laws of Virginia. This may be definitely traced, at least in New Jersey, Maryland, and Virginia, as well as a claim made by Germantown, now a part of Philadelphia, Pennsylvania, for independence of county control and county taxes, but overruled. The colonial "free burghs" disappeared except in Virginia. The name itself has disappeared in that state, but the exemption of cities from county control and from county taxes has been perpetuated and the cities today are as independent as the original "free burghs." County officers have only such authority in cities as is given them by special act, and residents of cities participate in the election of county officers and in county business only by express enactment. The inhabitants of cities are exempt from county taxes on property within the cities, with varied provisos as to obligations incurred before incorporation. The county and the city taxes are collected by separate officers and the state school funds are distributed to cities independent of county distribution. Separate courts with original jurisdiction, usually extending one mile beyond corporate limits, are established for cities. Provision for concurrent jurisdiction of county and city courts is sometimes made, as for the waters adjacent to Norfolk and Portsmouth, which are subject to the concurrent jurisdiction of the courts of Norfolk county and of the cities of Norfolk and Portsmouth. The inhabitants of cities are exempt from serving on juries in county courts. Deeds and other papers affecting property in the cities are recorded by city officers and not by county officers. Six cities have a peculiar standing, not to be considered as separation from county control, but as a readjustment of relations to county organization growing out of their expansion. These should not be confused with cities independent of counties, either by separation, as Baltimore and St Louis, or by establishment, as the cities of Virginia. The six cities that have grown to occupy county areas and to require rearrangement of their county relations are Washington, D. C., which has practically absorbed Washington county and become

identical with the District; New Orleans, New York, Brooklyn, Philadelphia, coextensive with Orleans parish, New York, Kings, and Philadelphia counties respectively, preserving certain county officers as such, and San Francisco, identical with San Francisco county, California. Hitherto the facts as to the cities of Virginia have not been generally recognized outside the state. The Congressional Directory stands almost alone among official documents out of the state in recognizing the separateness of the cities. The reports of the Tenth Census, volume VII, page 117, give a list of cities in Virginia paying no county taxes. The United States Civil Service Commission and the Bureau of Internal Revenue have found it necessary to recognize the independent position of city courts or of city governments in Virginia.

These facts, authenticated by citations from the laws and from other authorities, were presented by J. H. Blodgett before the Anthropological Society in a paper which is to be published by the American Historical Association.

THE JEWS OF SOUTHERN RUSSIA.*—By way of introduction, Dr Weissenberg discusses the relation of anthropometry to anthropology; the position of the former in antiquity, in the Middle Ages and the Renaissance; the part it played in the dispute between polygenists and monogenists; the light it shed on the evolution theory of Darwin, and the methods it should adopt in order to assist in the explanation of the origin and causes of the diversity of races. He particularly urges that the measurements should begin with the newborn child and be repeated at the different stages of the growth and development of the body in order to first determine which of the so-called race peculiarities are really ethnic and which are merely the result of gradual development or external circumstances, as the influence of climate, economic conditions and occupation on the growing organism.

Dr Weissenberg used for his *corpora operationis* 1,029 men, between the ages of 5 and 75, and 303 women, varying from 5 to 40 years of age. His measurements extended to about fifty particulars. He studied, in addition, the question of the progressive darkening of the colors of the hair and iris on 224 boys and 221 girls, ranging in age from 1 to 5 years.

*Abstract of an article entitled "Die südrussischen Juden. Eine anthropometrische Studie." By Dr S. Weissenberg. Archiv für Anthropologie, vol. XXIII, pp. 347–423 and 531–579.

The result of the investigation may be summed up as follows: The Jews of southern Russia, as compared with the Belgians, Swedes, and Russians (after the measurements of Quételet, Axel Key, and Sack respectively), are of medium stature; they have comparatively long bodies and short limbs; the form of the head is chamæbrachy-cephalic and exhibits a large cephalic index. The form of the face is oval, narrowing in the lower part, with a straight flat brow, relatively prominent cheek-bones, and straight jaws; the direction of the eyes is horizontal; the nose is leptorrhine and somewhat prominent, but usually straight, the "Semitic nose" being represented by only 10 per cent; the lips are regular; the mouth is somewhat broad, and the ears are of medium size. While until the fifth year light tints prevail in the color of the hair, at the age of ten the dark-haired constitute 75 per cent, and at twenty about 82 per cent. The same progressive darkening is observed in the color of the iris. Concerning weight and muscular strength (lift and pressure), the Jews stand lower than most Europeans. Until the twentieth year the development of the bodily strength of the Jews runs parallel with that of the Belgians and white Americans (after Gould); but, while with the two latter peoples it goes on increasing until the thirtieth year, it remains stationary with the Jews until that period, and then begins rapidly to decline. This early exhaustion of strength of the Jews, which finds its external expression in narrowness of the thorax, is, Dr Weissenberg contends in opposition to André, not due to a racial peculiarity, but to external circumstances, such as early beginning of mental work, prevalence of sedentary occupations, early marriages, and the sharper struggle for existence superinduced by them.

Of special interest are Dr Weissenberg's observations on the Jewish type and the "Jews as a race," to which the closing chapter is particularly devoted. He asserts that his investigations have convinced him of a "complete agreement in the development of the Jews of southern Russia with that of other European nations." He scouts the idea of a pronounced Jewish type, by reason of which a Jew can be diagnosed at a glance, as a popular myth ("Laienfabel"). It is not anthropologic but ethnographic elements (attire, religious customs, expression of the face, carriage of the body) that make the Jew discernible. He also rejects the two-type theory—*i. e.*, the division of the Jews

into the two distinct types of the *Sephardim* or Spanish and *Ashkenazim* or German Jews. Observations of such characteristic features as the color of the hair and eyes, the cephalic index, etc., lead him to assume that the Jews of eastern Europe, and especially those of southern Russia, are composed of several anthropologically different types which are far removed from the original Semitic type preserved in the Arabs. Dr Weissenberg accounts for this transformation of the type of the Jews in southern Russia and in eastern Europe by assuming an early migration of the Jews over the Caucasus and the south Russian steppes. During this migration their mingling with other peoples, which may have begun in antiquity, attained, through Judaizing of surrounding tribes, its highest degree. In the close contact with the pronounced brachycephalic peoples of the Caucasus, as also with the Turkish tribe of the Chazars, who in the eighth century were converted to Judaism, we have, he says, the elements which perfectly explain the almost absolute brachycephaly of the Jews, as also the frequency of mongoloid characteristics.

Dr Weissenberg's treatise is filled with interesting and instructive points of a general nature, such as the relations of pubescence, climate, geological nature of the soil, economic conditions, and occupation to the growth and development of the body, etc.; its usefulness is much enhanced by numerous comparative tables, diagrams, and photographs.

I. M. Casanowicz.

District of Columbia Archeology.—While engaged in grading for a race-track at Bennings, near Washington city, workmen recently uncovered a number of arrow and spear points and a quantity of pottery. The site was probably that of a village of the Anacostia Indians.

The Flinders-Petrie collection of relics from the tombs and towns of the Libyan settlers in Egypt was formally placed on exhibition at the University of Pennsylvania on March 21. In the course of an address delivered on this occasion Dr William Pepper announced that the value of the collections in the University museum is estimated at $750,000.

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Vasco da Gama Celebration.—The Sociedade de Geographia de Lisboa will celebrate, in July, 1897, the four-hundredth anniversary of the voyage of discovery of Vasco da Gama. The celebration will be conducted under the patronage of the king, and the anthropological and geographical societies of America have been invited to participate. Communications may be sent to Sr F. I. Ferreira do Amaral, Lisbon, Portugal.